

WORKBOOK CHANGE(S)

Add D 550000055.DOT
Rev Date 3-15-04
F.A. Date 3-29-04
Letting Date 7-04

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Remarks New SS. Added
by Mandatory #2
for 7-04 letting

Dates

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Federal Highway Administration
Florida Division
227 N. Bronough Street, Room 2015
Tallahassee, FL 32301

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FDOT MS-75

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MAR 30 2004

SPECIFICATIONS

To:	Organization:	Date:	Routing Symbol:
MR. DUANE BRAUTIGAM	FDOT, SPECIFICATIONS ENGINEER	March 29, 2004	MS-75

- ☐ Per Your Request
☒ For Your Information
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☐ For Your Approval
☐ For Your Signature
☐ Please Answer
☐ Prepare Reply
For Signature of

Remarks:

FLORIDA SPECIFICATIONS

D0040398.D01, Supplemental Specification for Notice of
Intellectual Property Interests and Department's Future Rights to
a VECP, Section 004

D5500000.D01, for Fencing, Section 550

ATTACHMENTS

By Ann Allshouse
FOR: JAMES E. ST. JOHN,
DIVISION ADMINISTRATOR

Telephone Number:
(850) 942-9650, EXT. 3034

FDOT MS: # 29 Org/Rtg Symbol

DON Davis: ANN to file in binders cc: 1 (w/specification)



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

March 15, 2004

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
545 John Knox Road
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 550
Proposed Specification: D5500000.D01

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Fencing.

This change was proposed by Chester Henson of the State Drainage Office to include post assemblies in the cost of the fencing pay items and not as separate items.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Signature on file

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/jf

Attachment

cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

FENCING.
(REV 3-15-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

Deleted: of the Specifications

Inserted: of the Specifications

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as otherwise detailed in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

Deleted: may be detailed

550-4.2 Spacing of Posts: Space posts as shown in the Design Standards, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

Deleted: . . .

Deleted: Type R fencing in accordance with details shown in the plans.†

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550-4.3 Clearing: Where the clearing and grubbing for the project includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and may restrict clearing where permission from the property owners cannot be obtained.

Deleted: Do not extend such clearing beyond the right-of-way line.

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with the Design Standards.

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550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm]

below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of non-corrosive electrical-type clamps.

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be plan quantity for the number of gates and the length of each type of fence constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.2, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be plan quantity completed and accepted. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, will be full compensation for all work and materials necessary for the complete installation, including line posts, corner, end, and pull posts. Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular

terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.

(f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

550-6.2 Payment Rates for Extra-Length Posts: Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts.

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans or Design Standards for each type and case.

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.4 Payment Items: Payment shall be made under:

- Item No. 550- 10- Fencing - per foot.
- Item No. 2550- 10- Fencing - per meter.
- Item No. 550- 60- Gates - each.
- Item No. 2550- 60- Gates - each.

Deleted: which will prevent corrosion

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Deleted: , the number of corner post assemblies, and the number of pull and end post assemblies,

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Deleted: 550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies: The number of corner post

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Deleted: 550-6.2 Items of Post ... [4]

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Deleted: Standard, up to 14 feet ... [8]

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Deleted: Item No. 550- 2- Fencing [12]

Deleted: Item No. 550-74- . . . [13]

FENCING.
(REV 3-15-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as otherwise detailed in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

550-4.2 Spacing of Posts: Space posts as shown in the Design Standards, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and may restrict clearing where permission from the property owners cannot be obtained.

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with the Design Standards.

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm]

below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of non-corrosive electrical-type clamps.

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be plan quantity for the number of gates and the length of each type of fence constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.2, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be plan quantity completed and accepted. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, will be full compensation for all work and materials necessary for the complete installation, including line posts, corner, end, and pull posts. Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.
- (f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

550-6.2 Payment Rates for Extra-Length Posts: Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts.

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans or Design Standards for each type and case.

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.4 Payment Items: Payment shall be made under:

Item No. 550- 10-	Fencing - per foot.
Item No. 2550- 10-	Fencing - per meter.
Item No. 550- 60-	Gates - each.
Item No. 2550- 60-	Gates - each.

Page 4: [1] Deleted	rd960ch	9/10/2003 10:32 AM
550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies: The number of corner post assemblies and of pull and end post assemblies to be paid for will be the number of such post assemblies constructed and accepted.		
Page 4: [2] Deleted	rd960ch	11/3/2003 3:34 PM
measured as specified in 550-5.2,		
Page 4: [3] Deleted	rd960ch	9/30/2003 7:41 AM
and the assemblies therefore, as provided below, and not including the payment stipulated for extra-length posts		
Page 4: [4] Deleted	rd960ch	9/10/2003 10:35 AM
550-6.2 Items of Post Assemblies: The Contract unit prices for the items of Corner Post Assemblies and Pull and End Post Assemblies will include the posts and the complete assemblies therewith for each such item. Approach posts and brace posts will be considered as part of the assembly of the corner, end or pull post being paid for separately, regardless of whether the corner, end, or pull post serves as a brace in more than one horizontal line.		
Page 4: [5] Deleted	rd960ch	9/10/2003 10:35 AM
For any length of posts in excess of the standard length for each particular type of post, approved by the Engineer as provided above, payment will be made for each foot [meter] in excess of the standard length at the percentage of the Contract unit price per foot [meter] for the item of Fencing, as shown in the following schedule.		
Page 4: [6] Deleted	rd960ch	11/3/2003 4:36 PM
Additional Payment for Each Foot [Meter] of Post in Excess of the Standard Length (in percent of Contract Unit Price for Fencing)		
Page 4: [7] Deleted	rd960ch	11/3/2003 4:37 PM
Recycled Plastic and Timber Posts		
Page 4: [8] Deleted	rd960ch	11/3/2003 4:36 PM
Standard, up to 14 feet [Standard, up to 4.3 m]		
Page 4: [9] Deleted	rd960ch	11/3/2003 4:37 PM
Over 14 ft, up to 20 feet [Over 4.3 m, up to 6.1 m]		
Page 4: [10] Deleted	rd960ch	11/3/2003 4:37 PM
When the length of post exceeds 20 feet [6.1 m], the work of furnishing and installing such posts and the costs incidental thereto will be paid for as unforeseeable work.		
Page 4: [11] Deleted	rd960ch	9/10/2003 10:36 AM
The above provisions for extra length payment will apply to end, corner and pull posts.		
Page 4: [12] Deleted	rd960ch	9/10/2003 10:59 AM
Item No. 550- 2-	Fencing, Type B - per foot.	
Item No. 2550- 2-	Fencing, Type B - per meter.	
Item No. 550- 3-	Corner Post Assemblies - each.	
Item No. 2550- 3-	Corner Post Assemblies - each.	
Item No. 550- 4-	Pull and End Post Assemblies - each.	
Item No. 2550- 4-	Pull and End Post Assemblies - each.	
Item No. 550- 5-	Pull Post Assemblies (Type B) - each.	
Item No. 2550- 5-	Pull Post Assemblies (Type B) - each.	
Item No. 550- 6-	End Post Assemblies (Type B) - each.	

Item No. 2550- 6-	End Post Assemblies (Type B) - each.
Item No. 550-71-	Fencing, Type R - per foot.
Item No. 2550-71-	Fencing, Type R - per meter.
Item No. 550-73-	Fencing (Special) - per foot.
Item No. 2550-73-	Fencing (Special) - per meter.

Page 4: [13] Deleted

rd960ch

9/30/2003 7:50 AM

Item No. 550-74-	Resetting Existing Fence - per foot.
Item No. 2550-74-	Resetting Existing Fence - per meter.
Item No. 550-75-	Fence Gate - Type A - per each.
Item No. 2550-75-	Fence Gate - Type A - per each.
Item No. 550-76-	Fence Gate - Type B - per each.
Item No. 2550-76-	Fence Gate - Type B - per each.
Item No. 550-79-	Sliding Gate - per each.
Item No. 2550-79-	Sliding Gate - per each.

APPROVED:  DATE: 3-29-04
For the Division Administrator



Judy F Frazier

03/16/2004 09:51 AM

To: donald.davis@fhwa.dot.gov,

cc: ann.allshouse@fhwa.dot.gov, bburleson@ftba.com, Clay
McGonagill/CO/FDOT, Ananth Prasad/CO/FDOT, David
Sadler/CO/FDOT,

cc:

Subject: D5500000.D01

Please review the attached draft specification and return your comments/approval within two weeks. Thank you.



D5500000.D01.doc

Judy Frazier
(850) 414-4127, SC 994-4127
judy.frazier@dot.state.fl.us



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

March 15, 2004

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
545 John Knox Road
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 550
Proposed Specification: D5500000.D01

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Fencing.

This change was proposed by Chester Henson of the State Drainage Office to include post assemblies in the cost of the fencing pay items and not as separate items.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/jf

Attachment

cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

FENCING.
(REV 3-15-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

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Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 ~~of the Specifications~~ and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as ~~may be detailed~~ otherwise *detailed* in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

~~Type R fencing in accordance with details shown in the plans.~~

550-4.2 Spacing of Posts: Space posts as shown in the ~~plans~~ *Design Standards*, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project ~~does not~~ includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and *may restrict clearing where permission from the property owners cannot be obtained.* ~~Do not extend such clearing beyond the right-of-way line.~~

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with *the* Design Standards, ~~Index No. 451.~~

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of

similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm] below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of *non-corrosive* electrical-type clamps ~~which will prevent corrosion.~~

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be *plan quantity* for the number of gates and, the length of each type of fence, ~~the number of corner post assemblies, and the number of pull and end post assemblies,~~ constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.32, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be *plan quantity* ~~measured along the bottom of the fabric, out to out of end posts, in the~~ completed and accepted fence. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

~~**550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies:** The number of corner post assemblies and of pull and end post assemblies to be paid for will be the number of such post assemblies constructed and accepted.~~

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, ~~measured as specified in 550-5.2,~~ will be full compensation for all work and materials necessary for the complete installation, including line posts, ~~but not including the corner, end, and pull posts, and the assemblies therefore, as provided below, and not including the payment stipulated for extra length posts.~~ Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular

terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.

(f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

~~**550-6.2 Items of Post Assemblies:** The Contract unit prices for the items of Corner Post Assemblies and Pull and End Post Assemblies will include the posts and the complete assemblies therewith for each such item. Approach posts and brace posts will be considered as part of the assembly of the corner, end or pull post being paid for separately, regardless of whether the corner, end, or pull post serves as a brace in more than one horizontal line.~~

550-6.36.2 Payment Rates for Extra-Length Posts: *Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts. For any length of posts in excess of the standard length for each particular type of post, approved by the Engineer as provided above, payment will be made for each foot [meter] in excess of the standard length at the percentage of the Contract unit price per foot [meter] for the item of Fencing, as shown in the following schedule.*

Additional Payment for Each Foot [Meter] of Post in Excess of the Standard Length (in percent of Contract Unit Price for Fencing)		
Total Length of Post	Steel and Aluminum Posts	Recycled Plastic and Timber Posts
Standard, up to 14 feet [Standard, up to 4.3 m]	50%	60%
Over 14 ft, up to 20 feet [Over 4.3 m, up to 6.1 m]	60%	80%
Over 20 feet* [Over 6.1 m*]	*	*
*When the length of post exceeds 20 feet [6.1 m], the work of furnishing and installing such posts and the costs incidental thereto will be paid for as unforeseeable work.		

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans or *Design Standards* for each type and case. ~~The above provisions for extra length payment will apply to end, corner and pull posts.~~

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.46.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.56.4 Payment Items: Payment shall be made under:

- Item No. 550- 10- Fencing, Type A - per foot.
- Item No. 2550- 10- Fencing, Type A - per meter.
- Item No. 550- 2- Fencing, Type B - per foot.
- Item No. 2550- 2- Fencing, Type B - per meter.
- Item No. 550- 3- Corner Post Assemblies - each.
- Item No. 2550- 3- Corner Post Assemblies - each.
- Item No. 550- 4- Pull and End Post Assemblies - each.
- Item No. 2550- 4- Pull and End Post Assemblies - each.
- Item No. 550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 2550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 550- 6- End Post Assemblies (Type B) - each.
- Item No. 2550- 6- End Post Assemblies (Type B) - each.
- Item No. 550- 71- Fencing, Type R - per foot.
- Item No. 2550- 71- Fencing, Type R - per meter.
- Item No. 550- 73- Fencing (Special) - per foot.
- Item No. 2550- 73- Fencing (Special) - per meter.
- Item No. 550- 60- Gates - each.
- Item No. 2550- 60- Gates - each.
- Item No. 550- 74- Resetting Existing Fence - per foot.
- Item No. 2550- 74- Resetting Existing Fence - per meter.
- Item No. 550- 75- Fence Gate Type A - per each.
- Item No. 2550- 75- Fence Gate Type A - per each.
- Item No. 550- 76- Fence Gate Type B - per each.
- Item No. 2550- 76- Fence Gate Type B - per each.
- Item No. 550- 79- Sliding Gate - per each.
- Item No. 2550- 79- Sliding Gate - per each.

FENCING.
(REV 3-15-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as otherwise detailed in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

550-4.2 Spacing of Posts: Space posts as shown in the Design Standards, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and may restrict clearing where permission from the property owners cannot be obtained.

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with the Design Standards.

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm]

below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of non-corrosive electrical-type clamps.

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be plan quantity for the number of gates and the length of each type of fence constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.2, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be plan quantity completed and accepted. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, will be full compensation for all work and materials necessary for the complete installation, including line posts, corner, end, and pull posts. Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.
- (f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

550-6.2 Payment Rates for Extra-Length Posts: Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts.

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans or Design Standards for each type and case.

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.4 Payment Items: Payment shall be made under:


Item No. 550- 10-	Fencing - per foot.
Item No. 2550- 10-	Fencing - per meter.
Item No. 550- 60-	Gates - each.
Item No. 2550- 60-	Gates - each.

Chester Henson

03/15/2004 02:01 PM

To: Judy F Frazier/CO/FDOT@FDOT

cc:

Subject: Re: D5500000 

Judy,

Here are the responses to the comments. I hope they are in the correct format. Thanks.



D550Resp.doc

Chester A. Henson, P.E.
State Traffic Standards Engineer

RESPONSES TO COMMENTS ON PROPOSED 550 SPECIFICATION

File: D5500000 Fencing
Bob Dion
UserEmail: bob_dion@urs

Comments:

550-6.2 2nd para. plans do not usually show the length of poles, suggest that this be changed from plans to Stanard Index.

RESPONSE: Added "Standard Index" to the text. Length is often indicated in the plans as well as the Standard Index.

File: D5500000 Fencing
Username: Bob Dion
UserEmail: bob_dion@urscorp.com

Comments:

550-3.6 delete 'of the specifications' this should be understood, unless will be carried thruout the spec book. see 120-13.4 of it for the reference to Section 125 as an example

RESPONSE: deleted the phrase "of the Specification".

550-4.3 suggest that the requirement to clear 2' outside the r/w if the plans don't show a distance. They usually do. Are you placing the responsibility on the Contractor to make the contacts with propertyt owners?

RESPONSE: The clearing requirement is already stated in the Specifications. The Specification states the Engineer may direct restrict clearing.

550-5.1 change the reference from 550-6.3 to 550-6.2, as 550-6.3 now deals with gates.

RESPONSE: Changed the reference to 550-6.2.

File: D5500000 Fencing
Username: Jennifer Taylor
UserEmail: jennifer.taylor@dot.state.fl.us

Comments:

Under 550-3.6 specification 6 is mentioned.
The only way that section can be about fencing is already covered well
in 550-4.7. Consider deleting the reference to Section 6.

RESPONSE: Section 6 refers to the Control Of Materials and is
applicable and has nothing to do with 550-4.7.

To section 550-4.7 consider adding "grounding will be located at the
nearest pull post."

RESPONSE: The grounding needs to be directly under the power lines,
not at a pull post.

File: D5500000 Fencing
Username: Thomas J. Conway
UserEmail: tom.conway@dot.state.fl.us

Comments:


550-3.2 need to close parentheses () around "Chain-Link".

RESPONSES: Added the close parentheses.



Judy F Frazier

03/15/2004 12:58 PM

To: Chester Henson/CO/FDOT
cc:
cc: Judy F Frazier/CO/FDOT@FDOT
Subject: Re: D5500000 

Thank you for the below but for our web page we need you to reply to each comment that was made. For an example of what we need please see the link below. Thank you.

http://www.dot.state.fl.us/specificationsoffice/History_Jan-June05/4550001RESPON.pdf

Judy Frazier
(850) 414-4127, SC 994-4127
judy.frazier@dot.state.fl.us
Chester Henson

Chester Henson

03/15/2004 12:56 PM

To: Judy F Frazier/CO/FDOT@FDOT
cc:
Subject: Re: D5500000 

Judy,

Here is the final draft of the Section 550 Specification. It incorporates the changes requested thru the industry review.



Section 550.doc

Chester A. Henson, P.E.
State Traffic Standards Engineer

FENCING.
(REV 1-13-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as ~~may be detailed~~ otherwise *detailed* in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

~~Type R fencing in accordance with details shown in the plans.~~

550-4.2 Spacing of Posts: Space posts as shown in the ~~plans~~ *Design Standards*, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project ~~does not~~ includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and *may restrict clearing where permission from the property owners cannot be obtained.* ~~Do not extend such clearing beyond the right of way line.~~

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with *the Design Standards, Index No. 451.*

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of

similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm] below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of *non-corrosive* electrical-type clamps ~~which will prevent corrosion.~~

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be *plan quantity* for the number of gates and, the length of each type of fence, ~~the number of corner post assemblies, and the number of pull and end post assemblies,~~ constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.2, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be *plan quantity* ~~measured along the bottom of the fabric, out to out of end posts, in the~~ completed and accepted fence. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

~~**550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies:** The number of corner post assemblies and of pull and end post assemblies to be paid for will be the number of such post assemblies constructed and accepted.~~

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, ~~measured as specified in 550-5.2,~~ will be full compensation for all work and materials necessary for the complete installation, including line posts, ~~but not including the corner, end, and pull posts, and the assemblies therefore, as provided below, and not including the payment stipulated for extra length posts.~~ Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.
- (f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

~~**550-6.2 Items of Post Assemblies:** The Contract unit prices for the items of Corner Post Assemblies and Pull and End Post Assemblies will include the posts and the complete assemblies therewith for each such item. Approach posts and brace posts will be considered as part of the assembly of the corner, end or pull post being paid for separately, regardless of whether the corner, end, or pull post serves as a brace in more than one horizontal line.~~

~~**550-6.36.2 Payment Rates for Extra-Length Posts:** Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts. For any length of posts in excess of the standard length for each particular type of post, approved by the Engineer as provided above, payment will be made for each foot [meter] in excess of the standard length at the percentage of the Contract unit price per foot [meter] for the item of Fencing, as shown in the following schedule.~~

D5500000
550-10, 250-10,
550-60, 2550-60

Additional Payment for Each Foot [Meter] of Post in Excess of the Standard Length (in percent of Contract Unit Price for Fencing)		
Total Length of Post	Steel and Aluminum Posts	Recycled Plastic and Timber Posts
Standard, up to 14 feet [Standard, up to 4.3 m]	50%	60%
Over 14 ft, up to 20 feet [Over 4.3 m, up to 6.1 m]	60%	80%
Over 20 feet* [Over 6.1 m*]	±	±
*When the length of post exceeds 20 feet [6.1 m], the work of furnishing and installing such posts and the costs incidental thereto will be paid for as unforeseeable work.		

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans or Standard Index for each type and case. The above provisions for extra length payment will apply to end, corner and pull posts.

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.46.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.56.4 Payment Items: Payment shall be made under:

- Item No. 550- 10- Fencing, Type A - per foot.
- Item No. 2550- 10- Fencing, Type A - per meter.
- Item No. 550- 2- Fencing, Type B - per foot.
- Item No. 2550- 2- Fencing, Type B - per meter.
- Item No. 550- 3- Corner Post Assemblies - each.
- Item No. 2550- 3- Corner Post Assemblies - each.
- Item No. 550- 4- Pull and End Post Assemblies - each.
- Item No. 2550- 4- Pull and End Post Assemblies - each.
- Item No. 550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 2550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 550- 6- End Post Assemblies (Type B) - each.
- Item No. 2550- 6- End Post Assemblies (Type B) - each.
- Item No. 550- 71- Fencing, Type R - per foot.
- Item No. 2550- 71- Fencing, Type R - per meter.
- Item No. 550- 73- Fencing (Special) - per foot.
- Item No. 2550- 73- Fencing (Special) - per meter.
- Item No. 550- 60- Gates - each.
- Item No. 2550- 60- Gates - each.
- Item No. 550- 74- Resetting Existing Fence - per foot.
- Item No. 2550- 74- Resetting Existing Fence - per meter.
- Item No. 550- 75- Fence Gate Type A - per each.
- Item No. 2550- 75- Fence Gate Type A - per each.
- Item No. 550- 76- Fence Gate Type B - per each.
- Item No. 2550- 76- Fence Gate Type B - per each.
- Item No. 550- 79- Sliding Gate - per each.
- Item No. 2550- 79- Sliding Gate - per each.



Judy F Frazier
03/15/2004 10:52 AM

To: Chester Henson/CO/FDOT,
cc:
cc:
Subject: D5500000

Have you had a chance to take a look at the comments? We are awaiting your reply so that we can make any further changes and forward to FHWA for their approval. It was my understanding that this spec would be issued as a Mandatory change.

Judy Frazier
(850) 414-4127, SC 994-4127
judy.frazier@dot.state.fl.us

----- Forwarded by Judy F Frazier/CO/FDOT on 03/15/2004 10:52 AM -----



Judy F Frazier
03/04/2004 02:58 PM

To: Chester Henson/CO/FDOT@FDOT
cc:
Subject: D5500000

Please review the attached comments received from Industry Review and respond to each so that we may continue with the review process. Thank you.



D5500000.doc Bob Dion.pdf Robert Dion.pdf Jennifer Taylor.doc Tom Conway.doc

Judy Frazier
(850) 414-4127, SC 994-4127
judy.frazier@dot.state.fl.us



Judy F Frazier

03/04/2004 08:57 AM

To: Chester Henson/CO/FDOT

cc:

Subject: D5500000

Please review the attached comments received from Industry Review and respond to each so that we may continue with the review process. Thank you.



D5500000.doc Bob Dion.pdf Robert Dion.pdf Jennifer Taylor.doc Tom Conway.doc

Judy Frazier
(850) 414-4127, SC 994-4127
judy.frazier@dot.state.fl.us




Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

MEMORANDUM

DATE: March 4, 2004
TO: Chester Henson
FROM: Clinton J. Shaw, State Specifications Office 
SUBJECT: **Proposed Modifications To Specification: D5500000**

Comments received, regarding the subject modification to the Standard Specifications, are attached. Please review these comments and advise of any further modifications by March 18, 2004. Also, please submit an electronic summary, of your decisions concerning these comment(s) in memorandum format. This summary will be posted on the State Specifications Office Web Page and included in the Specifications folder for future reference, should someone question your response. Your assistance will be appreciated.

Please Email submittals to SP965CS or clinton.shaw@dot.state.fl.us.

CS/jf

Attachment

FENCING.
(REV 1-13-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 of the *Specifications* and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as ~~may be detailed~~ otherwise *detailed* in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

~~Type R fencing in accordance with details shown in the plans.~~

550-4.2 Spacing of Posts: Space posts as shown in the ~~plans~~ *Design Standards*, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project ~~does not~~ includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and *may restrict clearing where permission from the property owners cannot be obtained.* ~~Do not extend such clearing beyond the right of way line.~~

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with *the Design Standards, Index No. 451.*

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of

similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm] below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the conductor to each fence element and the ground rod by means of *non-corrosive* electrical-type clamps ~~which will prevent corrosion.~~

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be *plan quantity* for the number of gates and, the length of each type of fence, ~~the number of corner post assemblies, and the number of pull and end post assemblies,~~ constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.3, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be *plan quantity* ~~measured along the bottom of the fabric, out to out of end posts, in the~~ completed and accepted fence. Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

~~**550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies:** The number of corner post assemblies and of pull and end post assemblies to be paid for will be the number of such post assemblies constructed and accepted.~~

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, ~~measured as specified in 550-5.2,~~ will be full compensation for all work and materials necessary for the complete installation, including line posts, ~~but not including the corner, end, and pull posts, and the assemblies therefore, as provided below, and not including the payment stipulated for extra length posts.~~ Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.
- (f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

~~**550-6.2 Items of Post Assemblies:** The Contract unit prices for the items of Corner Post Assemblies and Pull and End Post Assemblies will include the posts and the complete assemblies therewith for each such item. Approach posts and brace posts will be considered as part of the assembly of the corner, end or pull post being paid for separately, regardless of whether the corner, end, or pull post serves as a brace in more than one horizontal line.~~

550-6.36.2 Payment Rates for Extra-Length Posts: *Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts. For any length of posts in excess of the standard length for each particular type of post, approved by the Engineer as provided above, payment will be made for each foot [meter] in excess of the standard length at the percentage of the Contract unit price per foot [meter] for the item of Fencing, as shown in the following schedule.*

D5500000
550-10, 250-10,
550-60, 2550-60

Additional Payment for Each Foot [Meter] of Post in Excess of the Standard Length (in percent of Contract Unit Price for Fencing)		
Total Length of Post	Steel and Aluminum Posts	Recycled Plastic and Timber Posts
Standard, up to 14 feet [Standard, up to 4.3 m]	50%	60%
Over 14 ft, up to 20 feet [Over 4.3 m, up to 6.1 m]	60%	80%
Over 20 feet* [Over 6.1 m*]	*	*
*When the length of post exceeds 20 feet [6.1 m], the work of furnishing and installing such posts and the costs incidental thereto will be paid for as unforeseeable work.		

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans for each type and case. ~~The above provisions for extra length payment will apply to end, corner and pull posts.~~

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.46.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.56.4 Payment Items: Payment shall be made under:

- Item No. 550- 10- Fencing, ~~Type A~~ - per foot.
- Item No. 2550- 10- Fencing, ~~Type A~~ - per meter.
- Item No. 550- 2- Fencing, ~~Type B~~ - per foot.
- Item No. 2550- 2- Fencing, ~~Type B~~ - per meter.
- Item No. 550- 3- Corner Post Assemblies - each.
- Item No. 2550- 3- Corner Post Assemblies - each.
- Item No. 550- 4- Pull and End Post Assemblies - each.
- Item No. 2550- 4- Pull and End Post Assemblies - each.
- Item No. 550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 2550- 5- Pull Post Assemblies (Type B) - each.
- Item No. 550- 6- End Post Assemblies (Type B) - each.
- Item No. 2550- 6- End Post Assemblies (Type B) - each.
- Item No. 550- 71- Fencing, ~~Type R~~ - per foot.
- Item No. 2550- 71- Fencing, ~~Type R~~ - per meter.
- Item No. 550- 73- Fencing (Special) - per foot.
- Item No. 2550- 73- Fencing (Special) - per meter.
- Item No. 550- 60- Gates - each.
- Item No. 2550- 60- Gates - each.
- Item No. 550- 74- Resetting Existing Fence - per foot.
- Item No. 2550- 74- Resetting Existing Fence - per meter.
- Item No. 550- 75- Fence Gate - Type A - per each.
- Item No. 2550- 75- Fence Gate - Type A - per each.
- Item No. 550- 76- Fence Gate - Type B - per each.
- Item No. 2550- 76- Fence Gate - Type B - per each.
- Item No. 550- 79- Sliding Gate - per each.
- Item No. 2550- 79- Sliding Gate - per each.



Duane F Brautigam
01/29/2004 09:09 AM

To: Clinton Shaw/CO/FDOT@FDOT
cc:
Subject: Data posted to form 1 of
<http://www.dot.state.fl.us/specificationsoffice/IndustryReview.htm>

Duane F. Brautigam, P.E.
State Specifications Engineer
Florida Department of Transportation
(850) 414-4130; SC 994-4130
duane.brautigam@dot.state.fl.us

----- Forwarded by Duane F Brautigam/CO/FDOT on 01/29/2004 09:09 AM -----



**<webmaster@dot.state
.fl.us>**

01/28/2004 02:50 PM

To: <duane.brautigam@dot.state.fl.us>
cc:
Subject: Data posted to form 1 of
<http://www.dot.state.fl.us/specificationsoffice/IndustryReview.htm>

File: D5500000 Fencing
Username: Bob Dion
UserEmail: bob_dion@urscorp.com
UserTel: 386-740-0665
UserFAX: 386 740-1275
ContactRequested:
Remote Name: 68.16.163.85
Remote User:

Comments:

550-6.2 2nd para. plans do not usually show the length of poles, suggest
that this be changed from plans to Stanard Index.

File: D5500000 Fencing
Username: Jennifer Taylor
UserEmail: jennifer.taylor@dot.state.fl.us
UserTel: 386-740-3471
UserFAX:
ContactRequested:
Remote Name: 156.75.75.103
Remote User:

Comments:

Under 550-3.6 specification 6 is mentioned.
The only way that section can be about fencing is already covered well in
550-4.7. Consider deleting the reference to Section 6.

To section 550-4.7 consider adding "grounding will be located at the nearest
pull post."



Duane F Brautigam
02/05/2004 03:31 PM

To: Clinton Shaw/CO/FDOT@FDOT
cc:
Subject: Data posted to form 1 of
<http://www.dot.state.fl.us/specificationsoffice/IndustryReview.htm>

Duane F. Brautigam, P.E.
State Specifications Engineer
Florida Department of Transportation
(850) 414-4130; SC 994-4130
duane.brautigam@dot.state.fl.us

----- Forwarded by Duane F Brautigam/CO/FDOT on 02/05/2004 03:31 PM -----



<webmaster@dot.state.fl.us>
02/05/2004 03:12 PM

To: <duane.brautigam@dot.state.fl.us>
cc:
Subject: Data posted to form 1 of
<http://www.dot.state.fl.us/specificationsoffice/IndustryReview.htm>

File: D5500000 Fencing
Username: Bob Dion
UserEmail: bob_dion@urscorp.com
UserTel: 386-740-0665
UserFAX: 386 740-1275
ContactRequested:
Remote Name: 68.16.163.85
Remote User:

Comments:

550-3.6 delete 'of the specifications' this should be understood, unless it will be carried thruout the spec book. see 120-13.4 of it for the reference to Section 125 as an example

550-4.3 suggest that the requirement to clear 2' outside the r/w if the plans don't show a distance. They usually do. Are you placing the responsibility on the Contractor to make the contacts with propertyt owners?

550-5.1 change the reference from 550-6.3 to 550-6.2,as 550-6.3 now deals with gates.

Tom Conway

550-3.2 need to close parentheses () around "Chain- Link".

Thomas J. Conway
850-414-4118



Florida Department of Transportation

JEB BUSH
GOVERNOR


605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

MEMORANDUM

DATE: January 13, 2004

TO: Specification Review Distribution List

FROM: Duane F. Brautigam, P.E., State Specifications Engineer 

SUBJECT: Proposed Specifications Change: D5500000 - Fencing

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change to Section 550.

This change was proposed by Chester Henson of the State Roadway Design Office to include post assemblies in the cost of the fencing pay items and not as separate items because a review of completed projects indicated that a very small part of the overall fencing cost is associated with the post assemblies.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after February 10, 2004 may not be considered. Your input is encouraged.

DFB/jf

Attachment

COMMENTS:

Submitted by:

Phone #:

FENCING.
(REV 1-13-04)

SECTION 550 (Pages 623-628) is deleted and the following substituted:

SECTION 550
FENCING

550-1 Description.

Furnish, erect and reset metal fence of the type and at the locations shown in the plans.

550-2 Types of Fence.

The types of fence are designated as follows:

Type A (Farm Fence).

Type B (Chain-Link Fence).

Type R (Chain-Link Fence for Pedestrian Overpass).

550-3 Materials.

550-3.1 Type A Fence (Farm Fence): Meet the requirements of Section 954 for timber posts and braces. For metal posts and braces, meet the requirements of the Design Standards. For recycled plastic fence posts, meet the requirements of Section 972.

For the fabric and all other accessories, meet the requirements of the Design Standards.

550-3.2 Type B Fence (Chain-Link): For the posts, braces, fabric and all accessories other than the concrete for bases, meet the requirements of the Design Standards.

Use Class I concrete as specified in Section 347, or a premix approved by the Engineer for bases. The requirements contained in 347-2.2, and 347-3 will not apply.

550-3.3 Type R Fence (Chain-Link for Pedestrian Overpass): Use the fabric and accessories specified in the plans.

550-3.4 Resetting Fence: Use material from the existing fence. For any additional materials required, provide the same type of material as in the existing fence and as specified herein, including gates when applicable.

550-3.5 Optional Use of Materials: For Type A Fence, a combination of steel, aluminum, timber, recycled plastic or concrete posts may be used. Unless otherwise called for in the plans, line posts of one material may be used with corner, pull and end post assemblies of a different material. The Engineer will permit the use of line posts of only one optional material and pull posts assemblies of only one optional material between corner and end post assemblies. Within individual corner and end post assemblies, the Engineer will allow the use of only one optional material.

For Type B Fence, a combination of zinc-coated steel fence members, aluminum coated fence members and aluminum alloy fence members may be used. Unless otherwise indicated on the plans, the Engineer will allow the use of only one type of fabric material, one type of line post material and one type of pull assembly material between corner and end post assemblies.

550-3.6 Certification: Provide the Engineer certified test reports from the manufacturer confirming that all materials (posts, braces, fabric and all other accessories) conform to the requirements of this Section, Section 6 of the *Specifications* and the Design Standards. Provide the Engineer a copy of the certification at least ten days prior to fence construction.

Also furnish the Engineer a Certificate of Compliance certifying that the fencing system, materials and construction practices comply with the applicable Design Standards and Specifications.

Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports and visual inspection by the Engineer.

550-4 Construction Methods.

550-4.1 General: Install the fence in accordance with the specific requirements of this Article and with the details shown on the Design Standards for the particular type of fence called for, except for

Type R Fence which shall be detailed in the plans. Construct the fence in close proximity to the right of way line except as ~~may be detailed~~ otherwise *detailed* in the plans. Assume responsibility for obtaining satisfactory permits or permission from property owners for any encroachments required to perform the work, and for proper scheduling of the fence installation with the removal of existing fence where it is necessary to provide continuous security to adjacent areas already fenced. In order to meet this requirement, where necessary for maintaining security of livestock on adjacent property during construction of the new fence, the Engineer may require the erection and subsequent removal of temporary fencing.

~~Type R fencing in accordance with details shown in the plans.~~

550-4.2 Spacing of Posts: Space posts as shown in the ~~plans~~ *Design Standards*, within a tolerance of 12 inches [300 mm], except where definite spotting of corner posts is required. Ensure that, in any line of fence, the over-spacings and the under-spacings shall approximately compensate. Set additional line posts at abrupt changes in grade.

550-4.3 Clearing: Where the clearing and grubbing for the project ~~does not~~ includes the area occupied by the fence, clear the area to the limits shown in the plans. If the limits are not shown in the plans, clear the area at least 2 feet [0.6 m] wide on each side of the fence line. The Engineer may direct that desirable trees be left in place and *may restrict clearing where permission from the property owners cannot be obtained.* ~~Do not extend such clearing beyond the right-of-way line.~~

550-4.4 Construction Over Irregular Terrain and Other Obstructions:

550-4.4.1 Clearance of Bottom of Fence: Install the fence such that the bottom of the fence, in general, follows the contour of the ground. The fence is detailed in the plans at approximately 3 inches [75 mm] above ground line. Over irregular ground, however, the Engineer will permit a minimum clearance of 1 inch [25 mm] and a maximum of 6 inches [150 mm] for a length not to exceed 8 feet [2.4 m], and, for Type A fence, with the barbed wire spaced midway between ground and bottom of fabric.

550-4.4.2 Grading: Where necessary to secure proper vertical alignment and to meet the clearance requirements, fill depressions (except where filling would obstruct proper drainage) and cut down knolls and ridges. Provide a substantial and permanent foundation for the fence.

550-4.4.3 Use of Extra-Length Posts. At locations where it is impracticable to adjust the ground level, the Engineer may require that posts of additional length be set and that the opening at the bottom be closed by additional barbed wire, stretched taut between poles, with no vertical distance between wires greater than 3 inches [75 mm]. For all such posts requiring a concrete base, extend the concrete downward to the bottom of the extra-length post.

550-4.5 Setting Posts: If rock occurs within the required depth of the post hole, or pavement which is to remain in place exists at the location of a post, drill a hole of a diameter slightly larger than the greatest dimension of the post or footing and grout in the post or footing. Set timber posts either by digging or by driving. Set recycled plastic fence posts in accordance with *the Design Standards, Index No. 451.*

550-4.6 Placing Fabric: Do not place fabric and barbed wire until the posts have been permanently positioned and concrete foundations have attained adequate strength. Place the fabric by securing one end and applying sufficient tension to remove all slack before making permanent attachments at intermediate points. Fasten the fabric to all end, corner and pull posts by approved means. Fasten the fabric using tools designed for the purpose, in accordance with the manufacturer's recommendations. Apply the tension for stretching by mechanical fence stretchers or with single-wire stretchers designed for the purpose.

550-4.7 Electrical Grounds: Wherever a power line passes over the fence, install a ground directly below the point of crossing. Install a ground rod consisting of a galvanized rod with connection of similar metal if required, or of other appropriate material, 8 feet [2.4 m] in length and at least 5/8 inch [16 mm] in diameter. Drive the rod vertically until the top of the rod is approximately 6 inches [150 mm] below the ground surface. Use a No. 6 conductor to connect the rod and all fence elements. Connect the

conductor to each fence element and the ground rod by means of *non-corrosive* electrical-type clamps which will prevent corrosion.

550-5 Method of Measurement.

550-5.1 General: The quantities to be paid for will be *plan quantity* for the number of gates and, the length of each type of fence, ~~the number of corner post assemblies, and the number of pull and end post assemblies,~~ constructed and accepted. In addition, extra payment will be made, in accordance with 550-6.3, for additional lengths of post approved by the Engineer for the crossing of depressions in accordance with 550-4.4.3, muck areas, or other areas of inadequate support for a post of standard length.

550-5.2 Measurement of Fence Length, and Payment: The length of fence to be paid for will be *plan quantity* ~~measured along the bottom of the fabric, out to out of end posts, in the completed and accepted fence.~~ Measurement for Resetting Fence will be the actual length of existing fence reset, including gates when applicable.

~~550-5.3 Corner Post Assemblies, and Pull and End Post Assemblies:~~ The number of corner post assemblies and of pull and end post assemblies to be paid for will be the number of such post assemblies constructed and accepted.

550-6 Basis of Payment.

550-6.1 Basic Items of Fencing: The Contract unit price per foot [meter] for the Item of Fencing, ~~measured as specified in 550-5.2,~~ will be full compensation for all work and materials necessary for the complete installation, including line posts, ~~but not including the corner, end, and pull posts, and the assemblies therefore, as provided below, and not including the payment stipulated for extra length posts.~~ Such price and payment will include, but not be limited to, the following specific incidental work.

- (a) Any work required to level and prepare the terrain along the line of the fence.
- (b) Any additional clearing incidental to construction of the fence.
- (c) All preparation for post holes, in whatever type of material, as specified herein.
- (d) Any furnishing and installing of electrical grounds.
- (e) Any additional work or materials required for special construction over irregular

terrain, or terrain of inadequate support for the posts, including the additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.

(f) Any cost of erection and removal of any temporary fencing, which may be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

~~550-6.2 Items of Post Assemblies:~~ The Contract unit prices for the items of Corner Post Assemblies and Pull and End Post Assemblies will include the posts and the complete assemblies therewith for each such item. Approach posts and brace posts will be considered as part of the assembly of the corner, end or pull post being paid for separately, regardless of whether the corner, end, or pull post serves as a brace in more than one horizontal line.

550-6.3.2 Payment Rates for Extra-Length Posts: *Any extra length posts added to complete installation of the fence will require an invoice. The Contractor will be compensated for invoice price plus 10% as payment for any extra length posts.* ~~For any length of posts in excess of the standard length for each particular type of post, approved by the Engineer as provided above, payment will be made for each foot [meter] in excess of the standard length at the percentage of the Contract unit price per foot [meter] for the item of Fencing, as shown in the following schedule.~~

D5500000
550-10, 250-10,
550-60, 2550-60

Additional Payment for Each Foot [Meter] of Post in Excess of the Standard Length (in percent of Contract Unit Price for Fencing)		
Total Length of Post	Steel and Aluminum Posts	Recycled Plastic and Timber Posts
Standard, up to 14 feet [Standard, up to 4.3 m]	50%	60%
Over 14 ft, up to 20 feet [Over 4.3 m, up to 6.1 m]	60%	80%
Over 20 feet* [Over 6.1 m*]	*	*
*When the length of post exceeds 20 feet [6.1 m], the work of furnishing and installing such posts and the costs incidental thereto will be paid for as unforeseeable work.		

The standard length of steel, recycled plastic and aluminum posts will be the required length as indicated in the plans for each type and case. The above provisions for extra length payment will apply to end, corner and pull posts.

The payment for additional length of post will include the cost of additional concrete to extend concrete bases, as applicable.

550-6.46.3 Gate Payment: The quantities to be paid for will be full compensation for all labor, materials, posts and associated hardware for the complete installation of the type gate specified in the plans, and accepted by the Engineer.

550-6.56.4 Payment Items: Payment shall be made under:

Item No. 550- 10-	Fencing, Type A - per foot.
Item No. 2550- 10-	Fencing, Type A - per meter.
Item No. 550- 2	Fencing, Type B - per foot.
Item No. 2550- 2	Fencing, Type B - per meter.
Item No. 550- 3	Corner Post Assemblies - each.
Item No. 2550- 3	Corner Post Assemblies - each.
Item No. 550- 4	Pull and End Post Assemblies - each.
Item No. 2550- 4	Pull and End Post Assemblies - each.
Item No. 550- 5	Pull Post Assemblies (Type B) - each.
Item No. 2550- 5	Pull Post Assemblies (Type B) - each.
Item No. 550- 6	End Post Assemblies (Type B) - each.
Item No. 2550- 6	End Post Assemblies (Type B) - each.
Item No. 550- 71	Fencing, Type R - per foot.
Item No. 2550- 71	Fencing, Type R - per meter.
Item No. 550- 73	Fencing (Special) - per foot.
Item No. 2550- 73	Fencing (Special) - per meter.
Item No. 550- 60-	Gates - each.
Item No. 2550- 60-	Gates - each.
Item No. 550- 74	Resetting Existing Fence - per foot.
Item No. 2550- 74	Resetting Existing Fence - per meter.
Item No. 550- 75	Fence Gate Type A - per each.
Item No. 2550- 75	Fence Gate Type A - per each.
Item No. 550- 76	Fence Gate Type B - per each.
Item No. 2550- 76	Fence Gate Type B - per each.
Item No. 550- 79	Sliding Gate - per each.
Item No. 2550- 79	Sliding Gate - per each.

ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR

(The person who receives or originates the issue and needs to forward the issue for action.)

☒ Modify Specification _____550_____.
Section/File number

☐ New Section _____.
Section number

Subject: Fencing

Origination date: July 8, 2003

Originator: Chester Henson
Office/Phone: Roadway Design/ 414-4117
Email address/ chester.henson@dot.state.fl.us
Userid:

Problem statement: Staff within the FDOT have determined the fencing pay items could be streamlined by including the post assemblies within the lineal feet pay item for fencing.

Information source: Input was provided from design, estimates, construction and specifications on modification of the pay items for fencing.

Background data: A review of completed projects indicated that a very small part of the overall fencing cost is associated with the post assemblies. FDOT is the only organization that pays for the post assemblies as a separate item. The industry standard is to pay for fence as lineal feet of fence installed.

Desired implementation date: Beginning with the July 2004 letting.

SPECIFICATION PROCESSING AND STATUS FORM

Begin date: January 13, 2004

File Number: D5500000

Proposed completion date: April 13, 2004.

Implementation team member: Judy Frazier.

Schedule of activities: Internal, Industry and FHWA reviews.

Resource needs: None identified at this time.

Implementation schedule: This is to be implemented by Mandatory along with 7000025.

Proposed solution: The method of payment for fence post assemblies is being included in the payment for fence.

Progress report: What is the current status of the issue? Detail problems encountered, that hinders the process.